

REMARKS

Claims 1-25 are pending in this Application. Claims 1, 14, 21, 24 and 25 have been amended, and new Claim 26 has been added for consideration by the Examiner. Applicants also respectfully request reconsideration and allowance of the instant application.

The rejection of Claims 1-23 under 35 U.S.C. 103(a) as being unpatentable over Carey et al (USPN 3,154,504) taken with Wycech (USPN 4,923,902) and Kagoshima et al (U.S.P.N. 5,274,006), is respectfully traversed.

Carey et al. (U.S.P.N. 3,154,504) discloses a method for making epoxy foam in which the use of elevated temperatures are avoided, and cured without recourse to chemical blowing agents, e.g. refer to Col. 1, Lines 45-57 and Col. 4, Lines 60-75 of U.S.P.N. '504. This patent does not employ an exothermic reaction for expanding a blowing agent; but rather, '504 requires using a superatmospheric pressure that when released causes foaming to occur. While '504 does disclose phosphoric acid, '504 does not disclose selecting phosphoric acid and selecting a substantially water free phosphoric acid and in turn exothermically reacting the selected acid/epoxy to expand an encapsulated blowing agent.

Moreover, Carey does not disclose a two part foam system. The absence of such a two part foam system in the primary references is an indicia of unobviousness. It is noted that the Office Action lacks any explanation as to how or why a skilled person in this art would alter/modify the superatmospheric process of Carey in order to arrive at a two part system.

The Office Action indicates that Applicants have not shown that the applied references including Carey do not contain substantially water free phosphoric acid. Such is improper. The burden of proof is upon the Office to establish a prima facie case of obviousness.

Kagoshima et al. discloses a latent curing single-phase admixture that foams after being exposed to an external source of heat, e.g., refer to Col. 3, Lines 14-26 of Kagoshima. Hence, Kagoshima cannot teach the claimed A and B side precursors. Kagoshima achieves an exothermic reaction by external heating and melting his composition thereby permitting molten latent curing agents to interact with the molten composition, e.g., refer to Col. 2, Lines 35-44; Col. 3, Lines 14-26 and 38-47 and 53-66; and Col. 6, Lines 35-40 of Kagoshima. That is, Kagoshima fails to disclose or teach an exothermic reaction arising while combining A and B sides. Further, Carey teaches away from external heating and, therefore, is not combinable with Kagoshima.

The Office Action indicates that Kagoshima would inherently create an exothermic reaction between a Lewis acid and the epoxy resin. Such is inconsistent with the single-phase heat activated chemistry of Kagoshima. Such is also inconsistent with the latent curing system of Kagoshima (e.g., an inherent

reaction would cause a premature reaction/foaming of Kagoshima's heat activated material).

Wyceh (U.S.P.N. 4,923,902) fails to remedy the deficiencies of Carey or Kagoshima. Wyceh does not employ a hydrogen donor comprising at least one substantially water free Lewis acid for generating an exothermic reaction, e.g., refer to Col. 8, Lines 5-17 of Wyceh. Indeed the curing agents of Wyceh are basic curing agents, e.g., amines. A skilled person in this art would not believe that basic curing agents are relevant to the claimed invention that employs an acid source; but rather that Wyceh teaches away from using the claimed acid source.

Moreover, Wyceh teaches a delayed or slow cure time, e.g., 30 minutes. Such a slow cure time further indicates that the instant invention and Wyceh employ distinct chemistries, e.g., the instant invention can substantially simultaneous obtain a foam upon contacting the A and B sides. That is, Wyceh fails to disclose a method that employs an exothermic reaction which occurs during the combination of an A side and a B side for expanding a blowing agent. Further, Wyceh is limited to a precursor having a dough-like consistency whereas the instant invention can employ a liquid precursor, e.g., the instant invention can be dispensed as a pumpable material. Further yet, unlike Kagoshima, Wyceh expressly claims the absence of heat when producing a foam, e.g., refer to Claim 1 of Wyceh.

While it could be argued that Wyceh teaches using a Part A and Part B such is contrary to the disclosure of Carey that employs a superatmospheric process, or Kagoshima that clearly teaches the requirement of a single phase heat/hot melt activated system. That is, there is no problem of premature exothermic reaction since Kagoshima expressly requires a heat activated latent curing system and Carey employs a superatmospheric process wherein the use of elevated temperatures is avoided. Separating the epoxy resin and catalyst is antithetical to the express teachings of Kagoshima, e.g., such separation would inhibit, if not prevent, the molten reaction contemplated by Kagoshima. For these reasons, Applicants respectfully submit that Wyceh is not combinable with Kagoshima and/or Carey and, if combined, cannot render the claimed invention obvious.

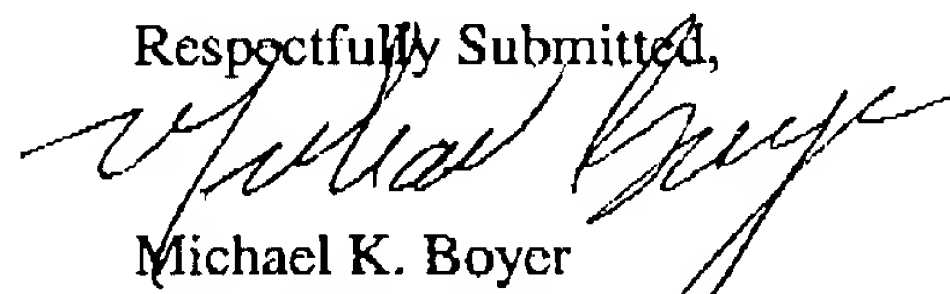
It is important to note that none of the applied references alone or in combination disclose that an exothermic reaction occurs when mixing, that the reaction generates heat sufficient to expand an encapsulated blowing agent and using the expanding encapsulated blowing agent to form a foam.

Moreover, none of the cited references disclose other aspects of the invention such as using a containment device, at least one polyol, a foam composite or laminate, polyvinyl alcohol, phenoxy resin, the dispensing system of Figure 2, among other aspects of the invention. For these reasons, Applicants respectfully submit that none of the references of record can be properly combined to support a prima facie case of obviousness.

The instant application claims benefit under 35 U.S.C. 120 of prior filed parent U.S. Patent Application Serial Nos. 09/081,967 and 09/197,124. Applicants respectfully request consideration of these applications as well as the information cited on the Information Disclosure Statements filed therein.

Please find attached hereto a Petition for a One (1) Month Extension of Time. Should there be any other fee due in connection with this Application, please charge the same to Deposit Account No. 15-0680 (Orscheln Management Company). Should the Examiner deem that any further action on the part of Applicant would advance prosecution, the Examiner is invited to telephone Applicants' attorney.

Respectfully Submitted,



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Attachments: One Month Extension of Time

Certificate of Facsimile Transmission Dated: November 05, 2002

Version With Markings to Show Changes Made

Please amend Claims 1, 14, 21, 24 and 25 as follows:

1(Twice Amended). A method for producing a foam comprising:

- (a) combining at least one liquid epoxy component with at least one acid source component, wherein said at least one acid source component comprises at least one hydrogen donating Lewis acid that is substantially water free, and at least one encapsulated blowing agent, under conditions sufficient to provide an exothermic reaction between said at least one liquid epoxy and at least one Lewis acid during said combining wherein an amount of heat is generated from said exothermic reaction that is sufficient to expand the combined components; and
- (b) utilizing heat from the exothermic reaction so as to expand the combined components to form a foam.

14(Three Times Amended). A foam precursor comprising:

- (a) an A-side foam precursor composition comprising at least one liquid epoxy compound, and at least one encapsulated blowing agent, and;
- (b) a B-side foam precursor composition comprising at least one acid source comprising about 1 to about 30wt.% of substantially water free phosphoric acid wherein said B-side foam precursor has an acidic pH .

21 (Twice Amended). A foam precursor comprising:

- (a) a A-side foam precursor composition comprising at least one liquid epoxy compound,
- (d) a B-side foam precursor composition comprising a combination comprising at least one polyol, at least one acid source comprising substantially water free phosphoric acid and having an acidic pH wherein

said phosphoric acid comprises about 3 to about 15 wt.% of the B-side;

and

- (c) at least one encapsulated blowing agent combined with at least one of said A or B side precursor.

24(Amended). A method for producing a foam comprising:

combining at least one liquid epoxy component, at least one acid source comprising phosphoric acid, and at least one encapsulated blowing agent wherein during said combining an exothermic reaction occurs when said at least one epoxy component and said at least one acid source are contacted that is sufficient to generate enough heat to expand the combined components,

dispensing the combined components into a containment device.

25(Amended). A method for producing a foam comprising:

combining an A-side foam precursor composition comprising at least one liquid epoxy compound, a B-side foam precursor composition comprising at least one acid source comprising phosphoric acid and having an acidic pH, and at least one encapsulated blowing agent, wherein said combining is performed under conditions sufficient to cause an exothermic reaction between [at least one component of said A-side and at least one component of said B-side] at least one epoxy compound and said phosphoric acid that generates enough heat to expand said blowing agent during said combining, and dispensing the combination into a containment device.

Please add new Claim 26 as follows:

--26 A method for producing a foam comprising:

providing an A-side foam precursor composition comprising at least one epoxy compound,

providing a B-side foam precursor composition comprising at least one acid source comprising phosphoric acid and having an acidic pH, wherein at least one

encapsulated blowing agent is present in at least one of said A and B side foam precursors,

mixing the A-side and B-side foam precursors together wherein during said mixing an exothermic reaction occurs between said at least one epoxy compound and said phosphoric acid source and wherein the exothermic reaction generates an amount of heat sufficient to expand said encapsulated blowing agent, and;

using the heat to produce a foam.--